

Appl. No. 10/709,735
Reply to Office action of February 13, 2008

Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application:

5 Listing of Claims:

1. (currently amended) An electronic device circuit comprising:

a bus interface for communications with a host;
an interface unit electrically coupled to the bus interface for downloading
operational firmware from the host and downloading receiving

10 initialization data required for initializing the electronic device from the
host;

a control circuit electrically coupled to the interface unit for transferring the
downloaded operational firmware to a volatile memory; and

15 a microprocessor electrically coupled to the control circuit for executing the
downloaded operational firmware while stored in the volatile memory;
wherein the microprocessor controls the normal operations of the electronic
device circuit according to the downloaded operational firmware, and the
initialization data contains instructions required to initialize the components of
the electronic device circuit before the microprocessor is able to execute the
20 operational firmware.

2. (previously presented) The electronic device circuit of claim 1 wherein the bus
interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

25 3. (previously presented) The electronic device circuit of claim 1 wherein the interface
unit is a macro.

4. (previously presented) The electronic device circuit of claim 3 wherein the macro
comprises handshaking, data reception, and writing received data into the
30 memory functions.

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5-6. (cancelled)

7. (previously presented) The electronic device circuit of claim 1 wherein the host is a
5 computer system.

8. (previously presented) The electronic device circuit of claim 1 wherein the
microprocessor executes the downloaded operational firmware without
accessing a non-volatile memory.

10 9. (previously presented) The electronic device circuit of claim 1 wherein the normal
operations of the electronic device circuit at least include reading data from an
optical disc.

15 10. (previously presented) The electronic device circuit of claim 1 wherein the volatile
memory comprises the downloaded operational firmware being executed by the
microprocessor to control normal operations of the electronic device circuit.

11. (currently amended) An electronic device comprising a download mode wherein
20 operational firmware is downloaded from an external host and stored into a
volatile memory of the electronic device and initialization data required for
initializing the electronic device is downloaded received from the external host,
followed by a normal mode wherein a microprocessor of the electronic device
executes the operational firmware stored in the volatile memory to control
25 normal operations of the electronic device, wherein the initialization data
contains instructions required to initialize the components of the electronic
device before the microprocessor is able to execute the operational firmware.

12. (previously presented) The electronic device of claim 11 wherein the normal
30 operations of the electronic device at least include reading data from an optical

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disc, processing the data, and transferring the processed data to the host.

13. (cancelled)

5 14. (previously presented) The electronic device of claim 11 wherein the operational
firmware is downloaded over a bus interface conforming to USB, IDE, SATA,
SAS, or SCSI interface standards.

10 15. (previously presented) The electronic device of claim 11 wherein the host is a
computer system.

15 16. (currently amended) A method of operating an electronic device, the electronic
device comprising a control circuit connected to a microprocessor, a volatile
memory, and a bus interface connected to a host, the method comprising:
downloading operational firmware from the host;
downloading receiving initialization data required for initializing the electronic
device from the host, wherein the initialization data contains instructions
required to initialize the components of the electronic device before the
microprocessor is able to execute the operational firmware;
20 writing the operational firmware into the volatile memory; and
the microprocessor executing the operational firmware in the volatile memory
to control normal operations of the electronic device.

25 17. (cancelled)

18. (original) The method of claim 16 wherein the operational firmware is
downloaded over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI
interface standards.

30 19. (previously presented) The method of claim 16 further comprising the electronic

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device transmitting an electrical signal to an application program in the host to begin downloading the operational firmware.

20. (original) The method of claim 16 wherein the host is a computer system.

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21. (currently amended) A computer system comprising:

a host computer comprising operational firmware for controlling operations of an electronic device and initialization data required for initializing the electronic device; and

10 the electronic device comprising:

a volatile memory comprising the operational firmware downloaded from the host computer over a connecting bus interface; and

a microprocessor executing the operational firmware in the volatile

memory for controlling normal operations of the electronic device;

15 wherein the electronic device further downloads receives the initialization data from the host computer, and the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware.

20 22. (previously presented) The computer system of claim 21 wherein the normal

operations of the electronic device at least include controlling the rotational speed of an optical disc in the electronic device and reading data from the optical disc.

25 23. (original) The computer system of claim 21 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

24. (cancelled)

30 25. (currently amended) An electronic device controller comprising:

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a bus interface for communications with a host;
a volatile memory for storing operational firmware downloaded from the host;
a microprocessor for controlling normal operations of the electronic device by
executing the operational firmware stored in the volatile memory;
5 an RF circuit; and
a control circuit connected to the bus interface, the volatile memory, the
microprocessor, and the RF circuit;
wherein initialization data required for initializing the electronic device is
downloaded received from the host, and the initialization data contains
10 instructions required to initialize the components of the electronic device before
the microprocessor is able to execute the operational firmware.

15 26. (previously presented) The electronic device controller of claim 25 wherein the
volatile memory comprises the downloaded operational firmware being executed
by the microprocessor to control normal operations of the electronic device.

20 27. (currently amended) An electronic device circuit used in a host system, wherein
the electronic device circuit has operational firmware downloaded from the host
system to a volatile memory through a bus interface every time after the host
being powered on; the electronic device circuit comprising:
a microprocessor for executing the downloaded operational firmware while
25 stored in the volatile memory;
wherein the microprocessor controls the normal operations of the electronic
device according to the downloaded operational firmware, and initialization
data required for initializing the electronic device circuit is downloaded
received from the host system, and the initialization data contains instructions
required to initialize the components of the electronic device circuit before the
microprocessor is able to execute the operational firmware.

30 28. (previously presented) The electronic device circuit of claim 27 wherein the bus

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interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

29. (cancelled)

5 30. (previously presented) The electronic device circuit of claim 27 wherein the host system is a computer system.

10 31. (previously presented) The electronic device circuit of claim 27 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory.

32. (previously presented) The electronic device circuit of claim 27 wherein the host system comprises the volatile memory.

15 33. (previously presented) The electronic device circuit of claim 27 wherein the host system comprises a host controller accessing the volatile memory that is shared by the host system and the microprocessor during the normal operation.

20 34. (previously presented) The electronic device circuit of claim 27 wherein the volatile memory is accessed only by the electronic device circuit on the normal operation.

35. (previously presented) The electronic device circuit of claim 27 wherein the electronic device circuit comprises the volatile memory.

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36-37. (cancelled)